CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

ORDER NO. 91-098
REVISED CEASE AND DESIST ORDER

CHEVRON U.S.A., INC.,
RICHMOND REFINERY
POLLARD POND AND HYDROLYZING PITS
RICHMOND, CONTRA COSTA COUNTY

The California Regional Water Quality Control Board, San Francisco Bay Region (herein after called the Board) finds that:

1. Chevron U.S.A. Inc., hereinafter called the Discharger, owns and operates the Richmond Refinery in Contra Costa County. This petroleum refinery, built at the turn of the century, is one of the largest and most complex refineries in the western United States. Over 300 different products have been produced here including gasoline, jet fuel, fuel oils, diesel, lube oil, waxes, asphalt, liquefied petroleum gas, chemicals, thinners, solvents, and catalysts. Wastes generated by the manufacture of these products have been deposited within various areas of the refinery at different times in the past.

2. Pollard Pond is a 3 acre Class I surface impoundment located on the northeastern corner of San Pablo Ridge, in the northwestern portion of the refinery (see Attachments 1 and 2). Formerly used as a waste disposal facility, the pond received about 30,000 cubic yards of sulfuric acid sludges - from the acid treatment of lubricating oils and light oils - between 1949 and 1954. The pond was not used again until 1967, at which time it received approximately 29,000 cubic yards of dredge spoils from the Refinery Yacht Harbor. Since the deposition of the dredge spoils, a density inversion has apparently occurred in which the less dense underlying sludge has migrated through the denser overlying dredge spoils to the pond surface.

   a. The sludge contained within the impoundment has a coal-like consistency with a very low pH (less than 2) and contains volatile, semi-volatile, acid and base-neutral extractable organic compounds, and non-hazardous levels of metals. The sludge has been classified as a hazardous waste due to its very low pH.

   b. The pond surface sludge layer - portions containing pockets of mud - has an average thickness of 10 feet. The sludge consists of a hardened tarry surficial layer and a softer tarry sludge below the surface layer. The pond contains a sludge layer generally underlain by dredged bay mud, though there are mixtures of mud and sludge. The dredged Bay Mud is generally very soft and saturated.

c. Pollard Pond is subject to the Toxic Pits Cleanup Act (TPCA) because it contains hazardous wastes and free liquids. In the past, the discharger disputed the applicability of the facility as a TPCA impoundment, changing the name of the facility, in 1987, to Pollard Landfill.

d. On January 18, 1989 the Board adopted Cease and Desist Order No. 89 - 011 which provided a 30 month time period for the discharger to research and develop a recycling method for the impoundment wastes. In addition, Order No. 89 - 011 requires a Stormwater Removal Plan at Pollard Pond to minimize free liquid, submission of status reports, and closure/remediation plans. The Stormwater Removal Plan has been approved and implemented.

e. The discharger has requested a study period extension due to a scheduling delay due, in part, by refusal of a cement kiln operator to accept the neutralized and treated Pollard Pond sludges for a test run of neutralized acid sludge as a supplemental fuel at a cement kiln. This refusal was despite a signed contract of the operator. The discharger has indicated that the delay will set back both the evaluation of recycling options and the overall closure plan which will include the underlying dredged Bay Mud and other contamination at the facility.

   The discharger's request for the extension appears reasonable based on the fact that recovery and removal of the wastes, whether by recycling or reuse, is more environmentally beneficial than to close in place or transport the wastes elsewhere.

f. The discharger is proposing to :

   1) Conduct a recycle study to determine the technical and economic feasibility of recycling the acid sludge as an alternate fuel at a cement kiln. Based on the results of the study, the acid sludge will be:

      a) Treated and transported to a cement kiln for recycling; or

      b) Deposited in an appropriate on-site or off-site repository after any required treatment. Treatment may take place at the repository contingent on the discharger obtaining any necessary permits.

   2) Deposit the dredged Bay Mud in an appropriate on-site or off-site repository after any required treatment. Treatment may take place at the

repository contingent on the discharger obtaining any necessary permits.

g. The discharger has indicated the following closure schedule:

1) If the cement kiln recycle study is successful; closure will be accomplished by the end of 1995.

2) If the cement kiln treatment is unsuccessful; closure will be accomplished by the end of 1994.

3. Hydrolyzing Pits were formerly three small unlined surface impoundments with a total area of 150 ft. by 200 ft. and a depth of 6 ft., located on the shore of San Pablo Bay (see Attachments 3 and 4). The Hydrolyzing Pits received wastewater from the facility's Alkane Plant at a rate of 150,000 gallons/day. The waste stream contained neutralized hydrofluoric acid, fluoride salts, and small amounts of oil. Benzene is a known constituent of the waste. The Hydrolyzing Pits contained saltwater which stimulated the precipitation of fluoride salts such as magnesium fluoride and calcium fluoride. These precipitates were excavated on an annual basis and shipped to an off-site Class I disposal site. The date of startup of the units is unknown. The Hydrolyzing Pits have not received waste since July 1986. The hazardous sludge contained within the Hydrolyzing Pits has been removed and has been replaced by contaminated, non-hazardous spoils from remediation operations at adjacent Schaefer Slough and Pond 13A. The Hydrolyzing Pits have been classified as Class I surface impoundments. Schaefer Slough was formally a ditch which carried the effluent from the Hydrolyzing Pits to the No. 13 oil/water separator for eventual discharge to the waste water treatment system. The slough was 450 ft. long with a width of 6 ft. and a depth of 4 ft.

a. There are 19 ground water monitoring wells installed to monitor the Hydrolyzing Pits/Schaefer Slough area. Wells downgradient of the Hydrolyzing Pits and Schaefer Slough have detected fluoride and benzene. Fluoride and benzene concentrations have also been identified beneath the Alkane plant which is located 300 ft. upgradient of the Hydrolyzing Pits/Schaefer Slough area. Therefore the source of benzene and fluoride in the Alkane Plant/Hydrolyzing Pits area is difficult to distinguish.

b. The Hydrolyzing Pits are subject to TPCA. The pits are now covered with a temporary 20 mil liner to maintain compliance with TPCA Cease Discharge Requirements.

c. On March 16, 1988, the Board adopted Waste Discharge Requirements Order No. 88 - 044 which requested a closure and post-closure plan. The discharger submitted the required closure plan which was approved. In August 1989

the discharger proposed the Groundwater Protection System (GPS), a refinery-wide system of downgradient groundwater extraction trenches and slurry walls, which affected the nature of the original plan as described in the Alkane GPS Master Plan for the Amended Hydropits Closure. The amended and approved closure plan calls for a Chapter 15 cap of the facility with a slurry wall and extraction trench system immediately downgradient of the Hydrolyzing Pits and adjacent to San Pablo Bay.

d. Closure of the Hydrolyzing Pits and Schaefer Slough is under way, in accordance with approved closure plans. Closure activities have included excavating six ft. of soil beneath the slough and disposal of the excavated soils within the Hydrolyzing Pits. Construction of the GPS components of the closure plan is scheduled to begin in the latter part of 1991.

4. For impoundments not within one-half mile of a potential drinking water source, such as Pollard Pond and the Hydrolyzing Pits, TPCA prohibits storage of hazardous wastes containing free liquids after January 1, 1989. The discharger has met this deadline for the Hydrolyzing Pits but not for Pollard Pond due to the time needed to address a recycling plan for the impoundment wastes so as to implement closure of the facility.

5. The Board adopted a revised Water Quality Control Plan for the San Francisco Bay Region (Basin Plan) on December 17, 1986 and amended it on August 19, 1987 and July 18, 1989, which contains water quality objectives. These requirements are consistent with that Basin plan.

6. The beneficial uses of San Pablo Bay in the vicinity of the site are:

a. Industrial service supply
b. Navigation
c. Contact and non-contact water recreation
d. Commercial and sport fishing
e. Wildlife and estuarine habitat
f. Preservation of rare and endangered species
g. Fish migration and spawning
h. Shellfish harvesting

7. The potential beneficial uses of groundwater, underlying the site, and deeper than 100 feet are:

a. Industrial process water and service supply
b. Agricultural supply

8. The Board adopted Waste Discharge Requirements Order No. 88 - 044 on March 16, 1988, revised later in October 18, 1989 (Order 89 - 175), which prescribe prohibitions, landfill and

surface impoundment closure specifications and provisions at the refinery for geologic and hydrogeologic site characterizations intended to permit corrective actions to be designed to protect the waters of the State.

9. Based on the available evidence, both Pollard Pond and the Hydrolyzing Pits are threatening to pollute or degrade the quality of the waters of the State.

10. Closure of Pollard Pond and the Hydrolyzing Pits will eliminate a pollutant source thereby preventing any pollutant migration to adjacent surface and ground waters.

11. This Order is a regulatory enforcement action, exempt from the provisions of the California Environmental Quality Act (Public Resources Code Section 21000, et seq.) in accordance with Section 15321, Chapter 3, Title 14 of the California Code of Regulations.

12. The Board has notified the discharger and interested agencies and persons of its intent to issue this Order and has provided them with the opportunity for a public hearing and to submit their written views and recommendations.

13. The Board, in a public hearing, held on June 19, 1991, heard and considered all comments pertaining to this matter.

IT IS HEREBY ORDERED, pursuant to Section 13301 of the California Water Code, that Chevron U.S.A. Inc., Cease and Desist from violating the Toxic Pits Cleanup Act of 1984, as follows:

A. PROHIBITIONS

1. The operation of this facility shall not create a condition of pollution or nuisance as defined in Sections 13050 (l) and (m) of the California Water Code.

2. The discharge of wastes or hazardous material in a manner which will degrade the water quality or adversely affect the beneficial use of the waters of the state of California is prohibited.

3. Discharge of hazardous wastes to the surface impoundment is specifically prohibited after the impoundment is closed according to the task and schedule in the provisions.

B. SPECIFICATIONS

1. Pollard Pond and the Hydrolyzing Pits shall be closed in a manner acceptable to the Executive Officer.

2. The discharger shall conduct ground water monitoring in accordance with the Self Monitoring Program originally requested in Order No. 88 - 044, later revised in Order No. 89-175.

C. PROVISIONS

Compliance with Specifications shall be in accordance with the following tasks and time schedules:

1. Pollard Pond

a. The discharger shall continue to manage stormwater removal in accordance with the Stormwater Removal Plan (SRP) approved by the Executive Officer. Discharger inspections, performed in accordance with the SRP shall be conducted during the months October through April. The inspection reports documenting compliance with the provisions of the plan shall be submitted by the 15th of the month following the report period.

b. Submit an Acid Sludge Remediation Plan acceptable to the Executive Officer. The plan will be submitted after conducting a recycle study to determine the economic and technical feasibility of recycling the Acid Sludge at a cement kiln.

Report Due: No later than December 31, 1991

c. Submit an overall Site Closure Plan acceptable to the Executive Officer that contains a detailed proposal for closure of Pollard Pond. The closure plan shall include the dredged Bay Mud and any residual contamination remediation issues and shall address post-closure monitoring and maintenance.

Report Due: No later than March 1, 1992

d. Submit a technical report (Closure Certification Report), acceptable to the Executive Officer, documenting compliance with TPCA Cease Discharge Requirements and completion of closure of Pollard Pond in accordance with the closure plan approved by the Executive Officer.

1) If the cement kiln recycle study is unsuccessful:

Report Due: No later than December 31, 1994

2) If the cement kiln recycle study is successful:

Report Due: No later than December 31, 1995

e. Submittal of semi-annual status reports, acceptable to the Executive Officer, which addresses the progress made in meeting the deadlines set forth in this Order. The semi-annual reports shall be submitted on January 15 and July 15. The status reports shall be in a business letter format that includes the following:

1) A summary of work completed since submittal of the previous report and work projected to be completed by the time of the next report;

2) Identification of any obstacles which may threaten compliance with this Order and what actions are being taken to overcome these obstacles; and,

3) In the event of non-compliance with this Order, written notification which clarifies the reasons for non-compliance and which proposes specific measures and a schedule to achieve compliance. This written notification shall identify work not completed that was projected for completion, and shall identify the impact on non-compliance on achieving compliance with the remaining requirements of this Order.

2. Hydrolyzing Pits

a. Submit a technical report (Closure Certification Report), acceptable to the Executive Officer, documenting completion of closure of the Hydrolyzing Pits in accordance with the closure plan approved by the Executive Officer.

Report Due: No later than November 30, 1992

b. Submittal of semi-annual status reports, acceptable to the Executive Officer, which addresses the progress made in meeting the deadlines set forth in this Order. The semi-annual reports shall be submitted on January 15 and July 15. The status reports shall be in a business letter format that includes the following:

1) A summary of work completed since submittal of the previous report and work projected to be completed by the time of the next report;

2) Identification of any obstacles which may threaten compliance with this Order and what actions are being taken to overcome these obstacles; and,

3) In the event of non-compliance with this Order, written notification which clarifies the reasons for non-compliance and which proposes specific measures and a schedule to achieve compliance. This written notification shall identify work not completed that was projected for completion, and shall identify the impact on non-compliance on achieving compliance with the remaining requirements of this Order.

3. Reports pursuant to compliance with the prohibitions, specifications, or provisions of this Order, except the semi-annual status reports, shall be prepared under the supervision of a registered civil engineer or certified engineering geologist as specified by Chapter 15, Article 3, Title 23 of the California Code of Regulations.

4. The discharger shall file with this Board a report of any material change or proposed change in the character, location, or quantity of this waste discharge. For the purpose of these requirements, this includes any proposed change in the boundaries, contours, or ownership of the disposal areas.

5. The discharger shall maintain a copy of this Order at the site so as to be available at all times to site operating personnel.

6. The Board considers the property owner and discharger to have continuing responsibility for correcting any problems within their reasonable control which arises in the future as a result of this waste discharge or water applied to this property during subsequent use of the land for other purposes.

7. The discharger shall comply with any amendments to the self monitoring program as directed by the Executive Officer.

8. The discharger shall permit the Board:

a. Entry upon premises on which the wastes and the impoundment(s) are presently or previously located or in which any required records are kept;

b. Access to copy of any of the records required to be kept under terms and conditions of this Order;

c. Inspection monitoring equipment or records; and,

d. Sampling of any discharge, wastes, water, soils, or other materials believed by the Board to affect the waters of the State.

9. These requirements do not authorize commission of any act causing injury to the property of another or of the public, do not convey any property rights, do not remove liability under federal, state, or local laws, and do not authorize the discharge of waste without appropriate federal, state, or local permits, authorizations, or determinations.

10. All submittals pursuant to this Order must be made as follows: two copies to the Board, one copy to the State Water Resources Control Board, one copy to the Department of Health Services, and one copy to the Contra Costa County Department of Health Services.

11. If the Executive Officer finds that the discharger has failed to comply with the provisions of this Order, he is authorized, after approval of the Board Chairman, to request the Attorney General to take appropriate action against the discharger, including injunctive and civil remedies, if appropriate, or to issue a Complaint for Board consideration of Administrative Civil liabilities.

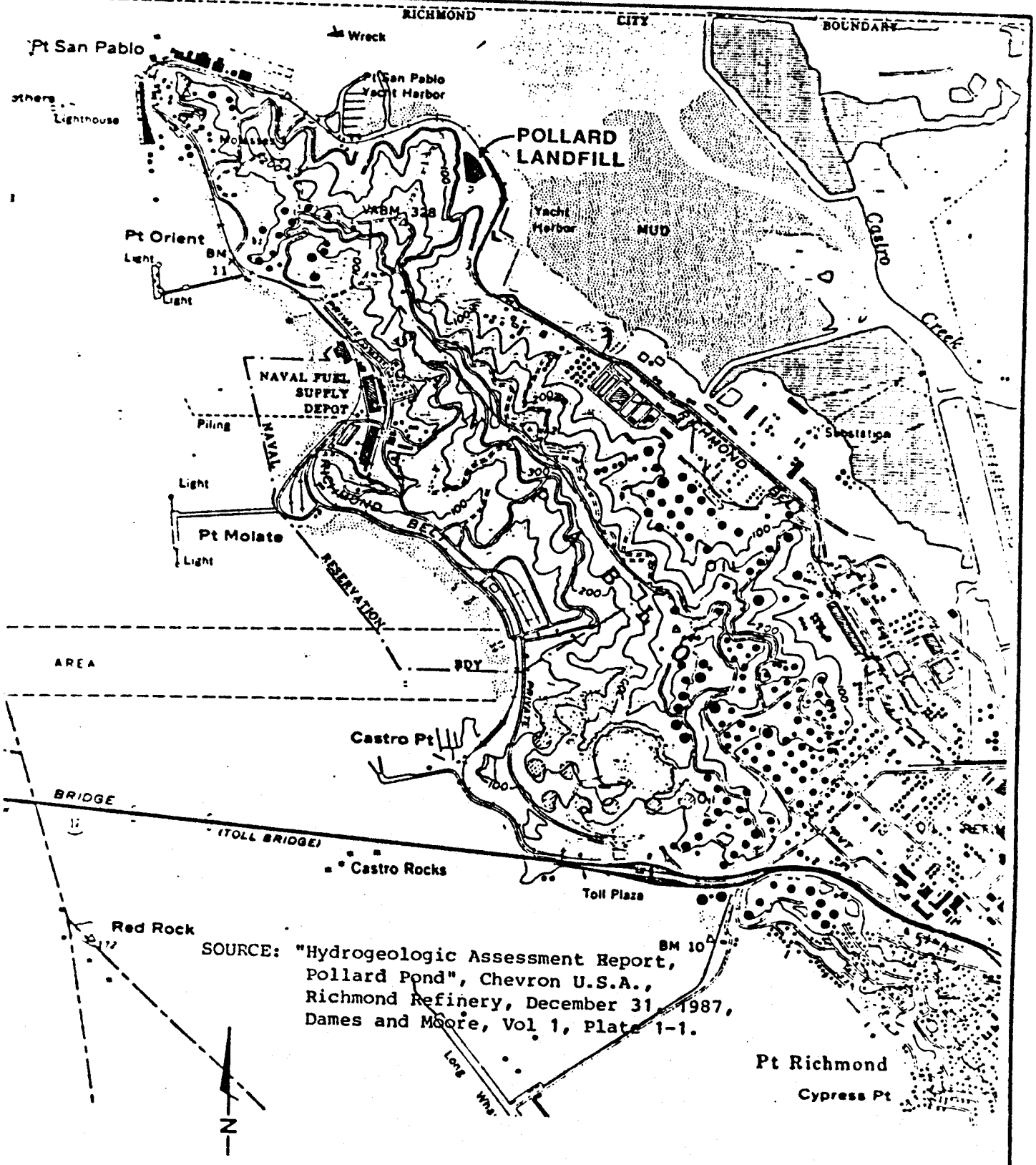
12. If the discharger is delayed, interrupted, or prevented from meeting one or more of the time schedules in this Order due to circumstances beyond their reasonable control, the discharger shall promptly notify the Executive officer. In the event of such delays, the Board will consider modification of the time schedules established in this Order.

13. This Order supersedes Cease and Desist Order No. 89 - 011. Cease and Desist Order 89 - 011 is hereby rescinded.

I, Steven R. Ritchie, Executive Officer, do hereby certify the foregoing is a full, true, and correct copy of an order adopted by the California Regional Water Quality Control Board, San Francisco Bay Region, on June 19, 1991.

Steven R. Ritchie
Executive Officer

Attachment 1: Pollard Pond Site Vicinity Map
Attachment 2: Plot Plan of Pollard Pond
Attachment 3: Hydrolyzing Pits Site Vicinity Map
Attachment 4: Plot Plan of the Hydrolyzing Pits




SOURCE: "Hydrogeologic Assessment Report, Pollard Pond", Chevron U.S.A., Richmond Refinery, December 31, 1987, Dames and Moore, Vol 1, Plate 1-1.

Contour Interval 20 Feet

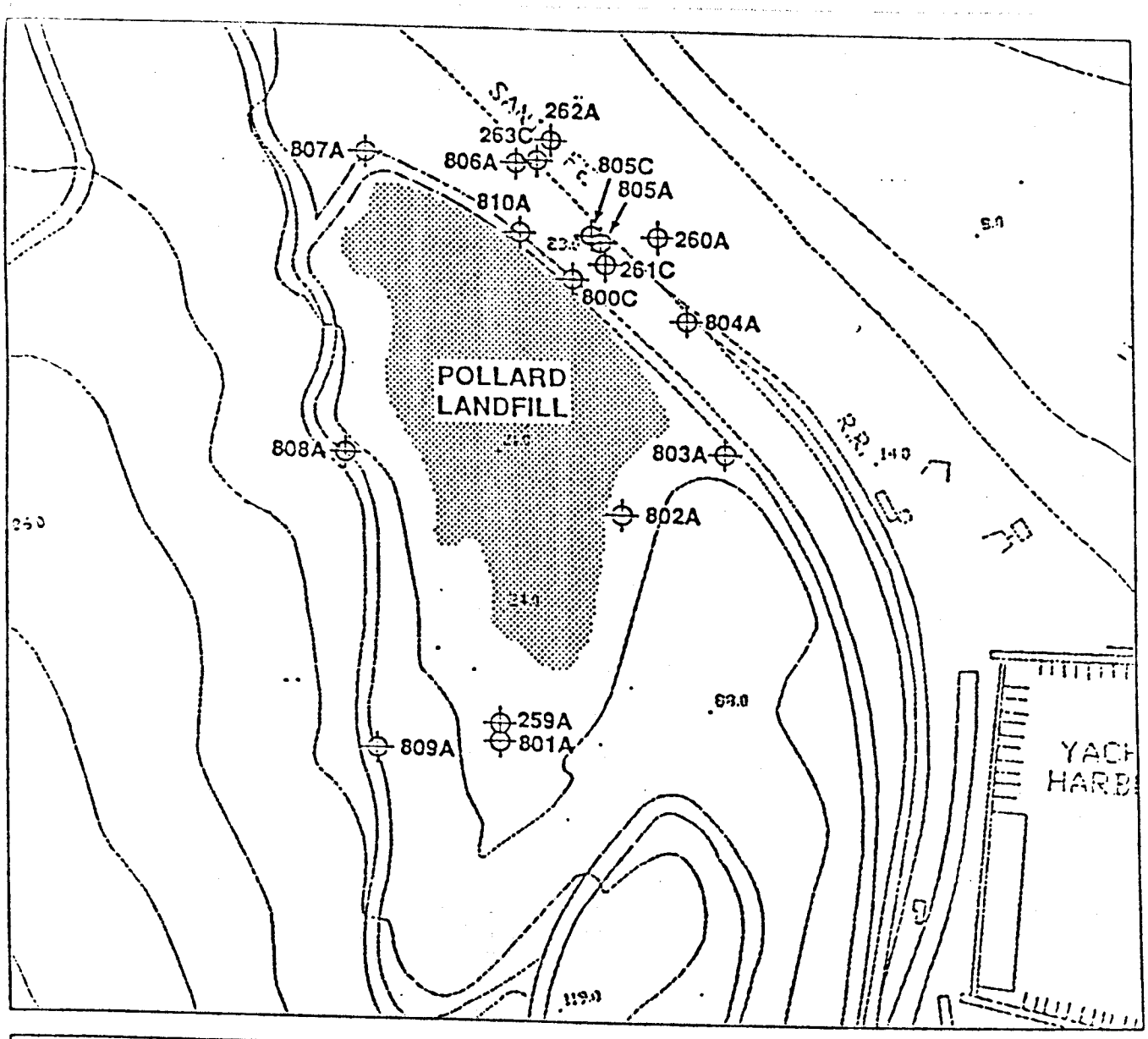
# SITE VICINITY MAP
## POLLARD LANDFILL

Chevron USA, Inc
Richmond Refinery, California

ATTACHMENT 1

Dames & Moore

PLATE 1-1




| Renamed Pollard Pond Wells (1/23/90) | |
|---|---|
| Old Name | New Name |
| WCC1 | GW800C |
| MW1 | GW801A |
| MW2 | GW802A |
| MW3 | GW803A |
| MW4 | GW804A |
| MW5B | GW805C |
| MW5 | GW805A |
| MW6 | GW806A |
| MW7 | GW807A |
| MW8 | GW808A |
| MW9 | GW809A |
| POW1 | GW810A |

KEY

Groundwater Monitoring Well

Approximate Pollard Landfill Area

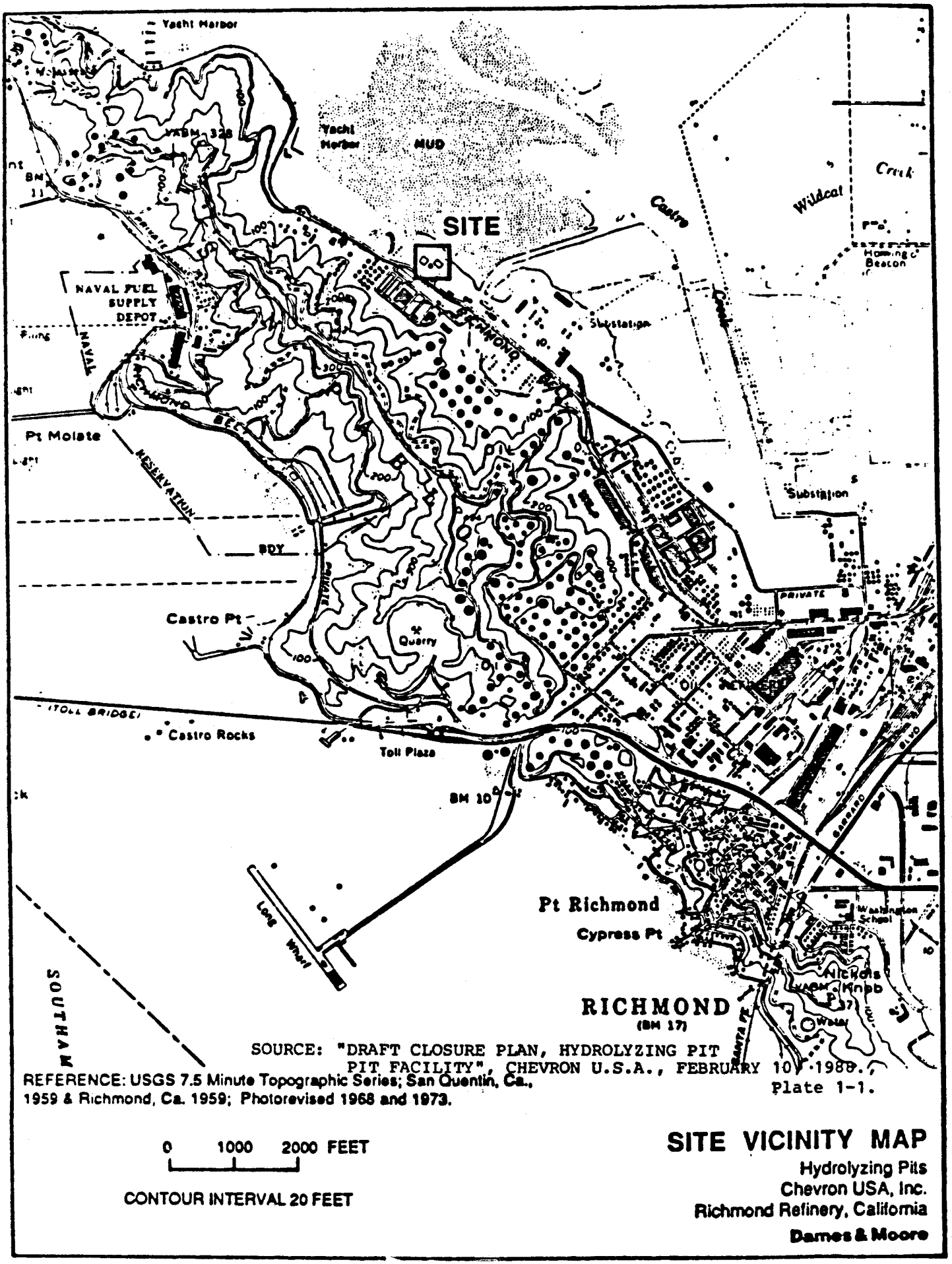
SOURCE: "Pollard Landfill Hydrogeologic Assessment Report Amendment", BEDM, Chevron U.S.A., dated June 19, 1990.

N

0 200

Feet

| | | |
|---|---|---|
| 19000-212-114 | Chevron U.S.A. Inc. | POLLARD LANDFILL WELL LOCATION MAP |
| BEDM | POLLARD LANDFILL Richmond Refinery, California | ATTACHMENT 2 |




SOURCE: "DRAFT CLOSURE PLAN, HYDROLYZING PIT PIT FACILITY", CHEVRON U.S.A., FEBRUARY 10, 1988., Plate 1-1.

REFERENCE: USGS 7.5 Minute Topographic Series; San Quentin, Ca., 1959 & Richmond, Ca. 1959; Photorevised 1968 and 1973.

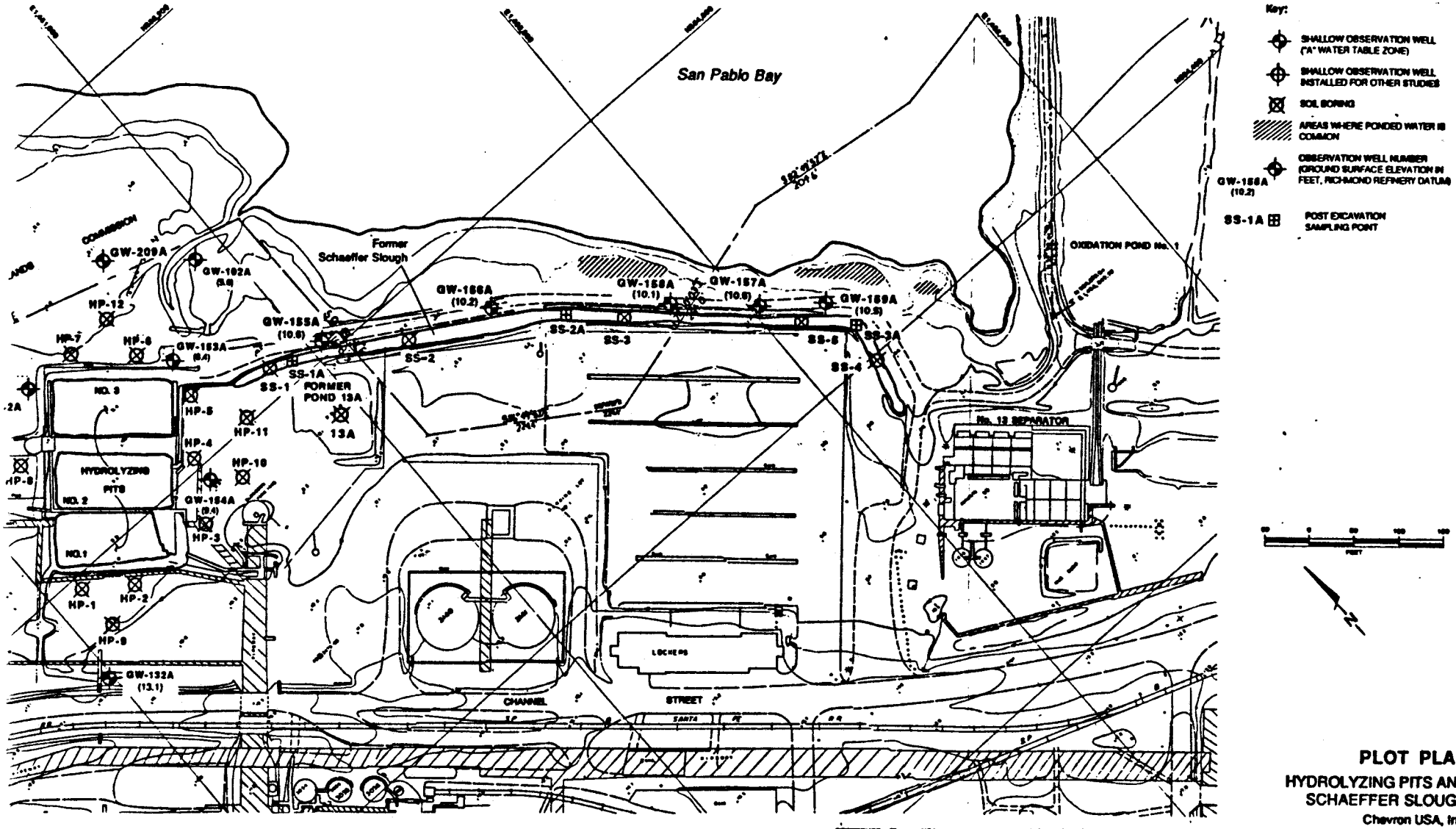
## SITE VICINITY MAP

Hydrolyzing Pits
Chevron USA, Inc.
Richmond Refinery, California

**Dames & Moore**

ATTACHMENT 3

PLATE 1-1




REFERENCE: Chevron USA, Inc., Drawings A-180048-2, A-180049, A-180056-2, and A-180058, 1977. Refinery Coordinates refer to Lambert Grid.

**PLOT PLAN**
**HYDROLYZING PITS AND SCHAEFFER SLOUGH**
Chevron USA, Inc.
Richmond Refinery, California
Dames & Moore

PLATE 2-1

SOURCE: "Draft Closure Plan, Hydrolyzing Pit Facility", Richmond Refinery, California, Dames and Moore, February 10, 1988.